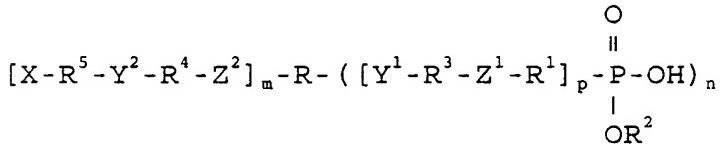


Patent claims

1. Compositions characterized in that they contain an acid and an organic polymer which has carboxyl and/or hydroxyl groups.
2. Composition according to claim 1, characterized in that it contains an acid which has a solubility of 0.5 to 20 wt.-% in water or in a mixture of 50 wt.-% water and 50 wt.-% ethanol.
3. Composition according to claim 1 or 2, characterized in that it contains an acid with protein- and/or calcium-precipitating properties.
4. Composition according to one of claims 1 to 3, characterized in that it contains as an acid a carboxylic acid, sulphonic acid and/or phosphonic acid.
5. Composition according to claim 4, characterized in that it contains a phosphonic acid of formula

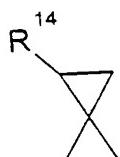


in which

- n is 1, 2, 3 or 4,
m is 0, 1 or 2,
p is 0 or 1,
R is a straight-chained or branched aliphatic hydrocarbon radical with 1 to 12 carbon atoms or an aromatic hydrocarbon radical with 6 to 12 carbon atoms or an aliphatic/aromatic hydrocarbon radical with 7 to 16 carbon atoms, which can be substituted by OH, NH₂ and/or COOR⁶,
- R¹ is a C₁ to C₁₂ alkylene, C₄ to C₁₂ cycloalkylene, C₆ to

C_{12} arylene or C, to C_{16} alkylenearylene radical, which can be substituted by OH, NH₂ and/or COOR⁶, or is absent,

- 5 R² is H, a C₁ to C₆ alkyl or a phenyl radical,
R³, R⁴ each mean, independently of each other, a C₁ to C₁₂ alkylene, C₆ to C₁₂ arylene or C, to C₁₆ alkylenearylene radical, which can be substituted by methyl, phenyl or fluorine, or are absent,
10 R⁵ is -CH=CR¹³-, a prop-1-ene-1,3-diyl, C₁ to C₆ alkenylene, C₃ to C₉ cycloalkylene, C₁ to C₆ alkylene or phenylene radical or a group of formula



- R⁶ is H, a C₁ to C₆ alkyl or a phenyl radical,
Z¹, Z² each mean, independently of each other, CO-O, CO-NR⁷, O-CO-NH, O, NH, S or are absent,
20 Y¹, Y² each mean, independently of each other, O, CO-O, CO-NR⁸, O-CO-NH or are absent,
R⁷, R⁸ each mean, independently of each other, H, or a C₁ to C₆ alkyl radical,
X is H, CN, N(R⁹)₂, OR¹⁰, COOR¹¹ or CONR₂¹²,
25 R⁹, R¹⁰, R¹¹, R¹² each mean, independently of each other, H, a C₁ to C₁₀ alkyl or a phenyl radical,
R¹³ is H or a methyl radical,
R¹⁴ is H or a C₁ to C₁₀ alkyl, vinyl or phenyl radical.

30 6. Composition according to claim 5, characterized in that

- n is 1 or 2 and/or
m is 1 and/or
p is 0 and/or
35 R is an aliphatic straight-chained or branched mono- to pentavalent alkane radical with 1 to 7 carbon atoms, an aromatic hydrocarbon radical with 6

carbon atoms or an aliphatic/aromatic hydrocarbon radical with 8 carbon atoms and/or

1 R¹ is a methylene or ethylene radical or is absent and/or

5 R² is H, a methyl or ethyl radical and/or

R³, R⁴ each mean, independently of each other, a methylene, ethylene, trimethylene, p-phenylene, ethyldene, 1-methylene ethane-1,2-diyl radical or are absent and/or

10 R⁵ is a methylene, ethylene, trimethylene, ethene-1,2-diyl, methylethylene, prop-1-ene-1,3-diyl, or a cyclopropylidene radical monosubstituted in 2 position or is absent and/or

R⁶ is H and/or

15 Z¹, Z² each mean, independently of each other, CO-O, O-CO-NH or O or are absent and/or

Y¹, Y² each mean, independently of each other, O, CO-O or CO-NR⁸ or are absent and/or

20 R⁷, R⁸ each mean, independently of each other, H or a methyl or ethyl radical and/or

X is H, CN, COOR¹¹ or CONR₂¹² and/or

R⁹, R¹⁰, R¹¹, R¹² each mean, independently of each other, H or a methyl, ethyl or phenyl radical and/or

25 R¹³ is H or a methyl radical,

R¹⁴ is H or a vinyl or phenyl radical.

7. Composition according to claim 5, characterized in that

n is 1,

30 m is 1,

p is 0,

R is a C₁ to C₃ alkylene or phenylene radical,

R² is H,

R⁴ is a branched or straight-chained C₁ to C₆ alkylene radical which can be substituted by 1 to 2 fluorine atoms and/or 1 phenyl radical or is absent,

35 R⁵ is a 1-methylene ethane-1,2-diyl radical,

Z² is absent,
Y² is O or is absent,
X is COOR¹¹ and
R¹¹ is H or a C₁ to C₅ alkyl or phenyl radical.

5

8. Composition according to claim 5, characterized in that

n is 2,
m is 2,
10 p is 1,
R is a quadrivalent aliphatic, aromatic, or aliphatic-aromatic hydrocarbon radical with 2 to 12 carbon atoms,
R¹ is absent,
15 R² is H,
R³ is a C₁ to C₃ alkylene or phenylene radical or is absent,
R⁴ is a branched or straight-chained C₁ to C₆ alkylene radical which can be substituted by 1 to 2 fluorine atoms and/or 1 phenyl radical or is absent,
20 R⁵ is a 1-methylene ethane-1,2-diyl radical,
Z¹, Z² are absent,
Y¹ is absent,
Y² is O or is absent,
25 X is COOR¹¹ and
R¹¹ is H or a C₁ to C₅ alkyl or phenyl radical.

9. Composition according to one of claims 4 to 8, characterized in that it contains as carboxylic acid maleic acid and/or trichloroacetic acid.

10. Composition according to one of claims 4 to 9, characterized in that it contains as sulphonic acid sulphosalicylic acid (2-hydroxy-5-sulphobenzoic acid).

35

11. Composition according to one of claims 1 to 10, characterized in that it contains 1 to 4 different acids.

12. Composition according to one of claims 1 to 11,
characterized in that it contains as a polymer a
polysaccharide, a polyethylene glycol, a polyacrylic acid,
a polyacrylamide, a polyvinylpyrrolidine or a mixture of
5 these substances.
13. Composition according to claim 12, characterized in that it
contains as a polymer a mixture of polyethylene glycol
dimethacrylate and polyacrylic acid.
10
14. Composition according to one of claims 1 to 13,
characterized in that it also contains fluoride ions.
15. Composition according to one of claims 1 to 14,
15 characterized in that it also contains a potassium ion-
releasing compound.
16. Composition according to one of claims 1 to 15,
characterized in that it also contains a film-forming
20 component.
17. Composition according to claim 16, characterized in that it
contains hydroxypropyl cellulose.
25 18. Composition according to one of claims 1 to 17,
characterized in that it contains

0.5 to 40 wt.-% phosphonic acid and/or
1.0 to 40 wt.-% carboxyl and/or hydroxyl-group-
30 containing polymer and/or
0.5 to 30 wt.-% of a film-forming component and/or
0.1 to 1.0 wt.-% fluoride ions and/or
0.1 to 10 wt.-% potassium ions and
0 to 97.8 wt.-% solvent.
35
19. Composition according to claim 18, characterized in that it
contains additionally 0.1 to 1.0 wt.-% flavourings.

20. Composition according to claim 18 or 19, characterized in that it contains as a solvent a mixture of ethanol and water.

5 21. Composition according to one of claims 18 to 20, characterized in that it contains

| | |
|-----------------------|---|
| 1 to 5 wt.-% | of at least one phosphonic acid, |
| 3 to 7 wt.-% | polyacrylic acid, |
| 10 15 to 25 wt.-% | polyethylene glycol dimethacrylate, |
| 3 to 7 wt.-% | hydroxypropyl cellulose, |
| 0.1 to 1.0 wt.-% | potassium fluoride, |
| 0.05 to 0.2 wt.-% | flavouring and |
| 15 53.8 to 76.9 wt.-% | ethanol/water mixture (approx. 50 wt.-%). |

22. Kit containing an acid and in spatially separated form thereof an organic, carboxyl and/or hydroxyl-group-containing polymer.

20 23. Kit according to claim 22, characterized in that the acid is applied to a brush.

25 24. Kit according to claim 22 or 23, characterized in that it contains a solution of the polymer, the composition of which is measured such that, when the solution is combined with the acid of the kit, a composition according to one of claims 18 to 21 is obtained.

30 25. Kit according to one of claims 22 to 24, characterized in that acid and polymer are housed in different chambers of a double-chambered vessel.

35 26. Use of a composition as defined in claims 1 to 21 for the precipitation of protein.

27. Use of a composition as defined in claims 1 to 21 for the desensitization of teeth.

28. Use of a composition according to one of claims 1 to 21 for
5 the preparation of an agent for the desensitization of teeth.